

Docket No.: M4065.0133/P133-B
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Brian A. Vaartstra, et al.

Application No.: Not Yet Assigned

Confirmation No.:

Filed: Concurrently Herewith

Art Unit: 2814

For: METHOD OF FORMING BARRIER
LAYERS (AS AMENDED)

Examiner: T. Le

INFORMATION DISCLOSURE STATEMENT (IDS)

MS Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement accompanies the new patent application submitted herewith.

Those patent(s) or publication(s) which are marked with an asterisk (*) in the attached form PTO/SB/08 (facsimile) are not supplied because they were previously cited by or submitted to the Office in a prior application no. 10/152,842 and relied upon in this application for an earlier filing date under 35 U.S.C. § 120.

Application No.: Not Yet Assigned

Docket No.: M4065.0133/P133-B

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1073, under Order No. M4065.0133/P133-B. A duplicate copy of this paper is enclosed.

Dated: August 19, 2003

Respectfully submitted,

By 

Thomas J. D'Amico

Registration No.: 28,371

Ryan H. Flax

Registration No.: 48,141

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorney for Applicant

| INFORMATION DISCLOSURE CITATION IN AN APPLICATION | | | | Docket Number | | Application Number | |
|--|-----|-----------------|----------|---|-------|--------------------|----------------------------------|
| | | | | M4065.133/P133-B | | Not Yet Assigned | |
| | | | | Applicant(s) | | | |
| | | | | Brian Vaartstra and Donald Westmoreland | | | |
| | | | | Filing Date | | Group Art Unit | |
| U.S. PATENT DOCUMENTS | | | | | | | |
| *EXAMINER INITIAL | REF | DOCUMENT NO. | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
| * | A | 5,567,964 | 10/22/96 | Kashihara et al. | | | 9/11/95 |
| * | B | 5,688,724 | 11/18/97 | Yoon et al. | | | 12/23/94 |
| * | C | 5,406,447 | 4/11/95 | Miyazaki | | | 12/29/92 |
| * | D | 5,362,632 | 11/8/94 | Mathews | | | 2/8/94 |
| * | E | 5,690,727 | 11/25/97 | Azuma et al. | | | 1/27/97 |
| * | F | 5,568,352 | 10/22/96 | Hwang | | | 11/16/95 |
| * | G | 5,686,339 | 11/11/97 | Lee et al. | | | 7/30/96 |
| * | H | 5,679,980 | 10/21/97 | Summerfelt | | | 12/19/96 |
| * | I | 5,142,438 | 8/25/92 | Reinberg et al. | | | 11/15/91 |
| * | J | 5,696,018 | 12/9/97 | Summerfelt et al. | | | 6/7/95 |
| * | K | 5,504,041 | 4/2/96 | Summerfelt | | | 8/1/94 |
| * | L | 5,665,628 | 9/9/97 | Summerfelt | | | 6/7/95 |
| * | M | 5,585,300 | 12/17/96 | Summerfelt | | | 8/1/94 |
| * | N | 5,187,638 | 2/16/93 | Sandhu et al. | | | 7/27/92 |
| * | O | 5,198,386 | 3/30/93 | Gonzalez | | | 6/8/92 |
| * | P | 5,464,786 | 11/7/95 | Figura et al. | | | 10/24/94 |
| * | Q | 5,478,772 | 12/26/95 | Fazan | | | 2/17/95 |
| * | R | 5,498,562 | 3/12/96 | Dennison et al. | | | 4/29/94 |
| * | S | 5,506,166 | 4/9/96 | Sandhu et al. | | | 9/27/94 |
| * | T | 5,605,857 | 2/25/97 | Jost et al. | | | 2/22/95 |
| * | U | 5,654,222 | 8/5/97 | Sandhu et al. | | | 5/17/95 |
| * | V | 5,654,224 | 8/5/97 | Figura et al. | | | 7/25/96 |
| * | W | 5,663,088 | 9/2/97 | Sandhu et al. | | | 5/19/95 |
| * | X | 5,717,250 | 2/10/98 | Schuele et al. | | | 3/7/96 |
| * | Y | 5,760,474 | 6/2/98 | Schuele | | | 7/9/96 |
| * | Z | 6,090,697 | 7/18/00 | Xing et al. | | | |
| * | A1 | 6,294,420 | 9/2001 | Tsu et al. | | | |
| * | B1 | 6,365,527 | 4/2002 | Lu et al. | | | |
| * | C1 | 5,489,548 | 2/1996 | Nishioka et al. | | | |
| * | D1 | 5,834,803 | 11/1998 | Hashimoto, Keiichi | | | |
| * | E1 | 5,895,938 | 4/1999 | Watanabe et al. | | | |
| * | F1 | 5,486,492 | 1/1996 | Yamamoto et al. | | | |
| * | G1 | 6,320,213 | 11/2001 | Kirlin et al. | | | |
| * | H1 | 6,455,419 | 09/2002 | Konecni et al. | | | |
| * | I1 | 6,194,754 | 02/2001 | Aggarwal et al. | | | |
| * | J1 | 5,414,301 | 5/1995 | Thomas, Michael E. | | | |
| * | K1 | 5,899,740 | 5/1999 | Kwon, Chul-soon | | | |
| * | L1 | 6,054,331 | 4/2000 | Woo et al. | | | |
| * | M1 | 6,100,200 | 8/2000 | Van Buskirk et al. | | | |
| * | N1 | 5,851,896 | 12/1998 | Summerfelt, Scott R. | | | |
| * | O1 | 6,284,646 | 9/2001 | Leem, Hyeun-Seog | | | |
| * | P1 | 6,580,111 | 6/2003 | Kim et al. | | | |

| | | |
|--|---|--------------------|
| INFORMATION DISCLOSURE CITATION IN AN APPLICATION | Docket Number | Application Number |
| | M4065.133/P133-B | Not Yet Assigned |
| | Applicant(s) | |
| | Brian Vaartstra and Donald Westmoreland | |
| | Filing Date | Group Art Unit |
| | | |

FOREIGN PATENT DOCUMENTS

| | REF | DOCUMENT NO. | DATE | COUNTRY | CLASS | SUBCLASS | Translations | |
|---|-----|-----------------|------------|---------|-------|----------|--------------|----|
| | | | | | | | YES | NO |
| * | AA | EP 0 770 862 A1 | 02.05.1997 | Europe | | | | X |

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

| | | | | | | | | |
|---|----|--|--|--|--|--|--|--|
| * | BB | Matsuhashi et al., <i>Optimum Electrode Materials for Ta₂O₃ Capacitors at High and Low Temperature Processes</i> , Extended Abstract of the 1993 International Conference on Solid State Devices and Materials, Makuhari, 1993, pp. 853-855. | | | | | | |
| * | CC | Kwon, et al., <i>Degradation-Free Ta₂O₅ Capacitor after BPSG Reflow at 850°C for High Density DRAMs</i> , <u>IEEE</u> , 1993, pp. 53-56. | | | | | | |
| * | DD | Shappirio, et al., <i>Diboride Diffusion Barriers in Silicon and GaAs Technology</i> , J. Vac. Sci. Technol. B, Vol. 4, No. 6, Nov/Dec 1986, pp. 1409-1415. | | | | | | |
| * | EE | Rebhoiz, et al., <i>Structure, Mechanical and Tribological Properties of Ti-B-N and Ti-Al-B-N Multiphase Thin Films Produced by Electron-Beam Evaporation</i> , J. Vac. Sci. Technol. A 16(5), Sep/Oct 1998, pp. 2850-2857. | | | | | | |

| | |
|---|-----------------|
| EXAMINER | DATE CONSIDERED |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |